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**Synopsis of the QUEDIINI of the United States.**

BY GEORGE H. HORN, M. D.

THE genera here included form, by the arrangement adopted by Dr. Leconte (Classification p. 63), a portion of the larger tribe Staphylinini, which is characterized by the insertion of the antennæ at or near the anterior margin of the front, above the base of the mandibles and near to the antero-superior margin of the eyes.

The present subtribe differs from the others in having the lateral margin of the thorax single, and the side of the head beneath with a distinct infra-orbital ridge.

The species are all slender, either fusiform or almost linear and in this respect resemble the Bolitobius group of the Tachyporini, with which they have several characters in common.

Our genera may be arranged as follows:

Tarsi four-jointed; mandibles prominent.

Maxillary palpi long, slender; anterior tarsal claws larger than the others.

**Tanygnathus.**

Tarsi five-jointed.

Antennæ geniculate, first joint elongate; anterior tarsal claws larger than the others.....**Acylophorus.**

Antennæ straight, first joint not elongate; tarsal claws similar on all the feet.

Palpi subulate. Prothorax beneath without post-coxal process.

**Heterothops.**

Palpi filiform. Prothorax with post-coxal process.....**Quedius.**

*Euryporus puncticollis* Erichs., has been rejected from the above system as the prothoracic margin is double. It will therefore take place in the genuine *Staphylinini* nearer *Philonthus*.

**TANYGNATHUS** Erichs.

Head slightly prolonged before the eyes which are oval and moderately prominent, infra-orbital ridge distinct. Antennæ geniculate, inserted at the sides of the front above the base of the mandibles. Maxillary palpi elongate, filiform. Mandibles elongate, slender, acute at tip and decussating. Tarsi four-jointed, claws very small on the middle and posterior tarsi, much larger on the anterior.

This genus had been placed by Erichson among the Tachyporini, but has very properly been removed. The insertion of the antennæ is that of the present group. The posterior coxæ although transverse are hidden in their outer half by the metathorax and the metathoracic

side pieces as in the other Quediini, while in the Tachyporini the coxæ are free in their entire length.

**T. collaris** Er., Staphyl. p. 289.—Head oval, smooth, shining, two punctures over each eye. Antennæ geniculate, longer than the head and thorax, slender. Thorax broader than long, narrowed in front, sides feebly base more broadly arcuate, disc with two punctures one-third from apex, two at the apical margin, others smaller and distant along the lateral and basal margins. Scutellum moderately densely and finely punctulate. Elytra conjointly a little wider than long, surface densely and finely punctulate and finely pubescent. Abdomen rather coarsely punctate. Length .14 inch; 3.5 mm.

The colors of this species are: head black, antennæ rufo-piceous, paler at tip and base, thorax bright rufous, scutellum rufous, elytra piceous, apical margin narrowly rufous, abdomen rufo-piceous, legs testaceous. The thorax may become darker.

Specimens were collected at Haulover, Florida, by Messrs. Hubbard and Schwarz, which agree with Erichson's description of the species as found in Venezuela and Guiana.

#### ACYLOPHORUS Nordm.

There are but few special characters among the species of this genus.

The head is oval, slightly longer than wide, with four punctures in a line on each side, two over each eye and two others posteriorly. Behind the eyes are numerous punctures with short pubescence, except in *flavipes* in which that part is nearly smooth.

The labrum is truncate.

The eyes are oval, longer than wide, the anterior margin subtruncate in most of the species and very narrowly separated from the base of the mandibles; *pratensis* however has the eyes rounded in front and distant from the base of the mandibles. The infra-orbital ridge although present is very feebly developed.

The antennæ equal the head and thorax in length, slightly or very decidedly (*flavipes*) thickened externally and with the second joint always longer than the third.

The thorax is broader than long, narrowed in front, and on each side of middle in front two punctures, one at the margin the other one-third behind it.

The anterior tarsi are stouter than the others, the first four joints short and indistinct, the fifth as long as these together, bearing stout feebly curved claws. The middle and posterior tarsi are slender and have disproportionately small claws. This difference in the claws is not sexual.

The differences between the sexes are not apparent.

The species of this genus are closely allied and differ by comparatively slight characters. Color must be considered of very doubtful value, and too great importance should not be attached to slight variations in punctuation.

In presenting a synoptic table of our species, I find myself compelled to make use of characters entirely different from those heretofore proposed.

Base of mandibles distant from the eyes.....**pratensis.**

Base of mandibles very close to the eyes.

Head behind the eyes with numerous punctures and short hairs.

Thorax rufous.....**flavicollis.**

Thorax black.

Scutellum usually sparsely punctured.....**pronus.**

Scutellum densely punctured.....**densus.**

Head behind the eyes smooth or nearly so.

Antennæ subclavate, the outer five joints transverse.....**flavipes.**

**A. pratensis** Lec. New Species, 1863, p. 34.—Black, shining. Elytra conjointly a little wider than long, surface rather coarsely but not densely punctured, punctures at the sides finer and denser, sparsely clothed with brownish hair. Scutellum sparsely punctate. Abdomen sparsely punctate and clothed with brownish hair. Length .28 inch; 7 mm.

Not only are the mandibles distant at base from the eyes but the insertion of the antennæ also. The palpi are rather longer and more slender than usual.

One specimen, Kansas.

**A. flavicollis** Sachse. Stettin Zeitschr. 1852, p. 143.—Head black, shining, anterior puncture at the margin of the eye, the second distant and nearly frontal, the two posterior on the occiput, placed obliquely. Antennæ piceous, testaceous at base. Thorax rufous, shining, normally punctured. Scutellum sparsely punctate. Elytra black, shining, sparsely pubescent, conjointly a little wider than long, surface coarsely and moderately closely, sub-muricately punctate, punctures a little finer and denser along the base and sides. Abdomen sparsely punctate, segments smoother posteriorly. Legs rufo-testaceous. Length .20—.22 inch; 5—5.5 mm.

Occurs from Pennsylvania to Kansas and Texas.

I am unable to find any real differences between this species and the next except in color. If the two are united it will merely parallel what occurs in many *Quedius* and in *Diachus Schaumii*.

**A. pronus** Erichs. Staphyl. p. 521; *gilensis* Lec. New Species, 1863, p. 34.—Black, shining. Antennæ piceous, usually paler at base. Legs variable, usually testaceous often piceous. Length .18—.24 inch; 4.5—6 mm.

The other characters are already given in the preceding species.

Occurs all over the United States on both coasts.

*A. densus* Lec. Proc. Am. Philos. Soc. 1878, p. 387.—Black, shining. Scutellum with numerous punctures. Elytra slightly longer than wide conjointly, surface slightly more finely and a little more densely punctured than in *pronus*. Antennæ piceous, last two joints somewhat paler. Legs yellowish testaceous. Length .28 inch; 7 mm.

This species is also closely related to *pronus* but may be distinct. The punctuation of the scutellum cannot be depended upon in the separation of this species from the preceding, nor can too much stress be laid upon the elytral sculpture, this also being a variable character. I have seen in Mr. Ulke's cabinet a specimen from Maryland, very nearly intermediate between *pronus* and *densus*, with however a little more resemblance to the latter in elytral sculpture. Until we have more specimens it will be better to retain this species as distinct, while *flavicollis* might be placed as a color variation of *pronus*.

Occurs in Florida and Maryland.

*A. flavipes* Lec., loc. cit.—Black, shining. Head with very few punctures at the side behind the eyes. Antennæ stouter externally, the last five joints as broad or broader than long. Elytra punctured as in *pronus*, the punctures however relatively longer and less closely approximated. Legs testaceous. Length .18 inch; 4.5 mm.

This species is very distinct from *pronus* by the characters afforded by the head and antennæ, the form is apparently more slender but this is deceptive.

One specimen, Florida.

#### HETEROTHOPS Steph.

The head in our species has on each side either three or four punctures arranged in nearly a straight line, the anterior being nearly at the middle of the margin of the eye; behind the eye are a few small setigerous punctures.

The palpi, both labial and maxillary have the last joint subulate.

The thorax has in front two punctures on the disc and two smaller at the apical margin.

The sexual characters are as in *Quedius*, the sixth abdominal segment emarginate in the male. The tarsi are dilated in both sexes nearly equally.

The color varies greatly among the individuals of a species, so that names have been given to color variations.

There seem to be but two species in our fauna distinguished by the following characters:

Third joint of the antennæ as long as the second, eleventh not longer than the two preceding together, head with four punctures on each side.

*fumigatus*.

Third joint of antennæ shorter than second, eleventh longer than the ninth and tenth together and not obliquely emarginate, head each side with three punctures.....**pugio**.

**H. fumigatus** Lec., var. *fuscus* Lec., var. *californicus* Lec. New Species, 1863, p. 35.—Head ovate, smooth, shining, on each side four punctures in nearly a straight line and two others near the nuchal constriction arranged transversely. Antennæ longer than the head and thorax, third joint as long as the second, eleventh shorter than the ninth and tenth united and slightly obliquely truncate at tip. Thorax as wide as long, narrowed in front, sides nearly straight, base broadly arcuate, anteriorly two discal punctures, with the usual apical and marginal punctures. Scutellum sparsely punctate. Elytra conjointly a little wider than long, surface moderately and not densely punctulate, sparsely pubescent. Abdomen more densely and finely punctured than the elytra along the anterior portion of the segments, less densely at apical portion. Length .12—.20 inch; 3—5 mm.

In color the following varieties occur:

*fuscus* Lec.—Head black, thorax (paler), elytra abdomen rufo-piceous. Legs testaceous. Antennæ piceous, three basal joints pale.

*fumigatus* Lec.—differs from the above in having the abdomen darker.

———Color above and beneath piceous.

*californicus* Lec.—Color darker piceous to black, legs variable in color from piceous to testaceous.

There is also some slight variation in punctuation both on the elytra and abdomen, but any attempt at a separation based on this makes a very unsatisfactory arrangement of the specimens before me.

I find the locality of the specimens has but little to do with color, the same variations in color occurring in specimens from Michigan, Pennsylvania or California.

The distribution of this species is very extended and we have it from Michigan, Canada, the Middle States, Texas and California. This species should be compared with *dissimilis* of Europe.

**H. pugio** Lec. New Species, 1863, p. 35.—Head ovate, black, smooth, shining, one puncture at the middle of the eye above, one at the posterior margin of the eye and a third posterior to this. Antennæ not longer than head and thorax, third joint scarcely longer than half the second, eleventh as long as the two preceding united, and not obliquely truncate at tip. Thorax piceous, smooth, shining, punctured as in the preceding, wider than long, narrowed in front, sides feebly, base more broadly arcuate. Scutellum moderately densely punctulate. Elytra conjointly nearly as wide as long, moderately densely punctulate and pubescent. Abdomen moderately densely and more finely punctulate. Length .10 inch; 2.5 mm.

The thorax is piceous, the elytra paler, the abdomen a little darker than the elytra. Legs piceo-testaceous. Antennæ piceous, three basal joints pale.

This species is very distinct by the structural characters given in the table, the punctuation although finer and denser than in the preceding species is a character of far less moment.

Occurs in New York, Pennsylvania, Ohio, and one from Camp Grant, Arizona.

### QUEDIUS Steph.

The *head* is oval or orbicular, sometimes moderately elongate (*peregrinus*), and posteriorly variably constricted. The front in many species has two punctures in addition to a normal series of four punctures which are placed. (1), at the base of the antenna; (2), near the margin of the eye anteriorly; (3), near the margin of eye posteriorly; (4), behind the eye.

The *eyes* vary in size and prominence in the different species, are oval, usually placed slightly obliquely to the axis of the head and often subtruncate in front.

The *antennæ* also vary in form, being either very slightly thickened externally, in which case the joints 4—10 are as wide as long or nearly so, or slender where these joints are longer than wide, or subfusiform (*explanatus*), stouter at middle than at base or tip. The second joint is normally much shorter than the third, frequently however as long.

The *head beneath* presents nearly the structure already mentioned as characteristic of the *Bolitobii*, (Trans. Am. Ent. Soc. 1877, vi, p. 83), that is, there is a well marked elevated line extending along the side of the head beneath, from the base of the mandibles to the nuchal constriction, and as might be expected is better developed in that species which resembles *Bolitobius* in appearance (*vernix*), and disappears almost entirely as the species approach *Philonthus*.

The *thorax* in most of the species is narrowed in front with the sides toward the edge regularly deflexed. In *ferox* the thorax has nearly parallel straight sides, and in *explanatus* there is scarcely any narrowing to the front. Two species (*explanatus* and *spelæus*) have the sides distinctly explanate, the same is sometimes feebly indicated in specimens of *fulgidus*. In all our species with two exceptions (*vernix*, *ferox*), there is a discal series of three punctures, by the Erichson method of numeration, the anterior of which is usually on the apical margin; other punctures forming a series lateral to this often occur and others, smaller, along the apical, lateral and basal margins. In the exceptions above noted there are but two punctures in the discal series.

The *under side* of the thorax presents but little variation. Erichson and many following him have used the process behind the anterior coxæ as a point of departure in the primary division of the species. An examination of a large number of specimens convinces me that this character has no value whatever. This piece which is the epimeron varies in size in the species and may be long or short, opaque, translucent, or transparent, but there is no such division as corneous and membranous. It is in fact in every species in our fauna semi-corneous. I have been obliged to reject it in arrangement of the species.

The *scutellum* varies in being smooth or punctured.

The *elytra* vary in punctuation in the species, but variation within specific limits must be admitted.

The *abdomen* varies in sculpture with the elytra and is usually more sparsely punctured.

The anterior tibiæ are rather inconspicuously spinulose externally, the middle and posterior very plainly so except in *lævigatus*.

The *tarsi* are hairy on their upper side in all the species, except *vernix* and *ferox* in which they are smooth and without hairs.

The *labrum* presents two distinct forms, and by this means the genus can be divided into two portions much more satisfactorily than by any other method. The normal form of labrum is that in which there is an acute incisure at middle so that a bilobed form is presented. In many however, the labrum is entire and either broadly arcuate in front (*molochinus*), or truncate.

The affinities of *Quedius* have already been hinted at and are plainly with *Bolitobius* through *vernix*, and with *Philonthus* through the species with the entire labrum.

The sexual characters are remarkably uniform and consist in the male, of an emargination of the sixth ventral (truncate in *vernix*), a greater dilatation of the anterior tarsi, and frequently a broader head.

Based on the foregoing remarks, the following method of arrangement is presented :

A.—Tarsi above hairy. Thorax with three discal punctures.

- |  |                    |
|--|--------------------|
| Labrum bilobed.....                                  | 1.                 |
| Labrum entire, either arcuate or truncate.....       | 10.                |
| 1.—Antennæ fusiform.....                             | <b>explanatus.</b> |
| Antennæ filiform or slightly thicker externally..... | 2.                 |
| 2.—Hind tibiæ distinctly spinulose externally.....   | 3.                 |
| Hind tibiæ not spinulose.....                        | 9.                 |





In Leconte's series are types of many of Mannerheim's and Mäklin's species, and specimens of their determination as follows :

<i>Q. erythrogaster</i> Mann.	<i>Q. plagiatu</i> s Mann.
<i>Q. sublimbatus</i> Mäkl.	<i>Q. longipennis</i> Mann.
<i>Q. pediculus</i> Nord. (Mann.)	<i>Q. senescens</i> Mäkl.
<i>Q. marginalis</i> Mäkl.	<i>Q. limbifer</i> (Fauvel mss.)

The following previously unknown have been determined from description :

<i>Q. melanocephalus</i> Mann.	<i>Q. bardus</i> Mels.
<i>Q. brunnipennis</i> Mann.	<i>Q. terminatus</i> Mels.
<i>Q. hyperboreus</i> Erichs.	<i>Q. peregrinus</i> Grav.

*Q. transparens* Mots., Bull. Mosc. 1845, iv, p. 358.—I have been unable to determine this species satisfactorily, but suspect it to be that form of *molochinus* with the front bipunctate. Motschulsky, however, says the "labrum is transverse and a little emarginate," and this latter character is the only one which deters me from referring it to that species.

***Q. explanatus* Lec.** Proc. Acad. 1858, p. 61.—Head large, oval, slightly longer in the ♀, semiopaque, finely alutaceous and finely but distantly punctured, with two supra-orbital large punctures distant from the eyes, another near the insertion of the antennæ and numerous small punctures at the side behind each eye; neck rather feebly constricted. Labrum bilobed. Eyes small, oval, oblique, subtruncate in front. Antennæ a little longer than the head, slightly fusiform, last joint slender and obliquely emarginate. Thorax wider than the head, broader than long, apex feebly emarginate, sides feebly arcuate and scarcely narrowed posteriorly, margin explanate, base broadly arcuate; disc convex, surface subopaque, finely alutaceous, very minutely punctulate, anteriorly with three small equidistant punctures on each side of middle in converging rows, and numerous marginal punctures along the sides and at base. Scutellum sparsely punctate. Elytra narrower than the thorax, conjointly a little wider than long, surface rather finely and closely punctate and clothed with recumbent black hairs. Abdomen a little less densely punctured than the elytra, more sparsely along the middle. Body beneath moderately closely punctulate and clothed with black pubescence. Legs similarly punctate. Tibiæ spinulose. Length .40—.80 inch; 10—20 mm.

The males have the anterior tarsi a little more broadly dilated than the female, the head larger and the sixth ventral segment slightly emarginate at tip.

The color of this species is black, without any tendency whatever to vary. The prothoracic process behind the coxa is large and corneous.

Occurs in California, from Tejon southward, and to Bitter Root Valley, Montana.

**Q. spelæus** Horn. Trans. Am. Ent. Soc. 1871, p. 332.—Form elongate. Head oval, longer than wide, surface smooth and shining, two supra-orbital punctures distant from the eyes and another behind the eye, behind which are some smaller punctures; neck moderately constricted. Labrum bilobed. Eyes oval, slightly oblique, and subtruncate in front. Antennæ filiform, one-half longer than the head, joints 4—10 similar, last joint longer and obliquely truncate. Thorax broader than long, narrowed in front, sides feebly base more broadly arcuate, margin near base explanate, surface highly polished and with three discal and the marginal punctures as in *explanatus*. Scutellum smooth. Elytra narrower than the thorax, conjointly as wide as long, surface closely punctulate and sparsely clothed with brownish hair. Abdomen parallel, above more sparsely punctured than the elytra, the punctures denser at the sides and anterior portions of the segments. Body beneath more sparsely punctured than above. Femora punctate, tibiæ spinulose. Length .56—.60 inch; 14—15 mm.

The anterior tarsi are dilated in both sexes but much more in the male, in which also the sixth ventral segment is feebly emarginate at middle.

The post coxal process is of moderate extent and semi-corneous. The thorax in general outline is nearly circular less the apical emargination. The color in the three specimens before me is pale brownish testaceous, varying to pale castaneous.

Two specimens were collected by Prof. Cope within the mouth of Wyandotte Cave, Indiana, a third is from Colorado by Morrison.

**Q. fulgidus** Fab. (*Staph.*), Mant. Ins. i, p. 220; Erichs. *Staph.* p. 525; *iracundus* Say, Trans. Am. Phil. Soc. N. S. iv, p. 449; *grænlandicus* Zett. Ins. Lappon. 61, 13; *erythrogaster* Mann. Bull. Mosc. 1852, ii, p. 314; *melanocephalus* Mann. loc. cit. p. 315.—Form moderately elongate. Head oval slightly broader than long ♂, or as long as wide ♀, surface smooth polished and with moderate punctures on each side, the first small over the insertion of the antennæ, second near the inner margin of the eye, third larger distant from the eye, a fourth post-ocular around which are numerous smaller punctures, neck feebly constricted. Eyes not prominent, slightly oblique, subtruncate in front. Antennæ piceous or rufo piceous, filiform, attaining the middle of the thorax, joints 4—10 as wide as long, eleventh longer and subacute at tip. Labrum bilobed. Thorax slightly wider than long, narrowed in front, apex emarginate, sides feebly arcuate, margin not explanate, base broadly arcuate, surface smooth and shining and with the three discal punctures on each side of middle in front, another series of three exterior to this and numerous marginal and basal punctures. Scutellum smooth. Elytra as wide as the thorax, conjointly wider than long, surface regularly and moderately coarsely but not densely punctured and sparsely pubescent. Abdomen more finely and densely punctured than the elytra, sparsely pubescent, beneath more coarsely punctured. Femora punctate, tibiæ spinulose. Length .28—.44 inch; 7—11 mm.

The anterior tarsi are about equally dilated in the sexes. The male has however a larger head and the sixth ventral feebly emarginate at middle.

The variations of color are so numerous in this species as to have caused the amount of synonymy above noted, to which European additions might be made. In all well preserved specimens the abdomen is iridescent.

The principal varieties are as follows :

*grønlandicus* Zett.—Color piceous or even black, legs and antennæ piceous.

*fulgidus* Fab.—Head and thorax black, elytra rufous or rufo-testaceous, abdomen piceous. Legs piceous varying to pale. = *iracundus* Say.

*erythrogaster* Mann.—Similar to *fulgidus* but with abdomen also rufous.

*melanocephalus* Mann.—Head black, thorax and elytra piceo-rufous, abdomen piceous.

There may possibly be some doubt regarding this last synonym, but immature specimens are before me which correspond very well with Mannerheim's description. It is however stated that the front at middle is not punctured, and this with the elytral punctuation fixes quite certainly the synonymy.

The prothoracic process is moderately long, and although corneous is semi-transparent.

This species is distributed over northern Europe and the north of our own continent, as far south as middle California and northern Georgia.

I have seen a curious deformity of the antennæ in a specimen of this species. On the right side joints six and seven, eight and nine in each case form one joint without indication of suture, and on the left side joints six and seven are connate but a constriction marks the point of union, while eight and nine are closely connate in a single joint as on the right side.

**Q. sublimbatus** Mäkl. Bull. Mosc. 1853, iii, p. 190.—Head oval, shining, smooth, a minute puncture over the base of the antennæ, a larger at the margin of the eye, one distant from the eye on the occiput, another posterior to the eye, front without punctures. Labrum bilobed. Antennæ nearly as long as the head and thorax, gradually broader to the tip, last joint larger than the preceding, obliquely truncate, color piceous or rufous. Eyes oval, longitudinal not truncate in front. Thorax wider than long, narrower in front, sides moderately base more strongly arcuate, surface smooth, shining with a dorsal series of three punctures, no lateral series, marginal punctures distant and small. Scutellum smooth. Elytra as wide as thorax, conjointly longer than wide, surface with coarse, deep and moderately closely placed punctures, sparsely pubescent. Abdomen sparsely finely punctate, sparsely pubescent. Body beneath very sparsely punctate, abdomen beneath as above. Femora very sparsely punctate, tibiæ finely spinulose. Length .20—.24 inch; 5—6 mm.

The sixth ventral of the male is rather deeply emarginate, and the anterior tarsi moderately dilated, and in the female feebly dilated.

The post coxal process of the thorax is short, translucent and semi-corneous.

The color is piceous, with the humeri and a narrow space at apex and along the suture paler. Legs testaceous or somewhat darker. Abdominal segments paler along their posterior borders.

The only variation is in the tendency of the thorax, elytra and abdomen to become brownish.

Occurs from Alaska to Fort Simpson and the Lake Superior region, (Michipicoton River, Schwars).

**Q. peregrinus** Grav. (*Staph.*), Monog. p. 53; Erichs. *Staph.* p. 550; *terminatus* Mels., Proc. Acad. ii, p. 39; *longiceps* Fv. ms.—Head elongate oval, much longer than wide, as long as the thorax, feebly constricted behind, and with punctures as in *sublimbatus*. Labrum bilobed. Eyes oval slightly oblique, subtruncate in front. Antennæ as in *sublimbatus*. Thorax polished, broader than long, narrower in front, sides feebly, base broadly arcuate, a dorsal series of three punctures, no lateral series, marginal punctures finer and distant. Scutellum smooth. Elytra conjointly a little longer than wide and slightly narrower than the thorax, surface sparsely not coarsely nor deeply punctate, sparsely pubescent. Abdomen more densely punctured than the elytra and with somewhat longer brownish hair, beneath punctured as above, body very sparsely punctate. Femora sparsely and finely punctulate, tibiae spinulose. Length .24—.36 inch; 6—9 mm.

The sexual characters are as in *sublimbatus*.

The color is here variable. A few specimens are entirely piceous with paler legs; *terminatus* Mels., has the last two abdominal segments paler; the thorax becomes quite rufous in many specimens and the elytra and abdomen rufo-piceous. In those specimens with a paler abdomen the margins of the segments are testaceous.

The post coxal process is as in *sublimbatus*.

Occurs from Canada to the Carolinas. It is abundantly distinguished from all others in our fauna by its elongate head, which is very feebly narrowed posteriorly.

**Q. capucinus** Grav. (*Staph.*), Monog. p. 40; Erichs. *Staphyl.* p. 531; *pediculus* Nord. Symb. 79; Erichs. loc. cit.; *inversus* Say, Trans. Am. Phil. Soc. iv, p. 449; *bardus* Mels. Proc. Acad. ii, p. 39; *ater* Zieg. Proc. Acad. ii, p. 266; *marginalis* Mäkl. Bull. Mosc. 1852, ii, p. 315; *cænobita* Fv. ms.—Head orbicular ♂ or slightly oval ♀, smooth, shining, moderately constricted behind, a small puncture at the base of the antennæ, a second at the middle of the upper border of the eye, a third above the eye on the occiput, another behind the eye near which are numerous smaller punctures; front with two punctures between the eyes. Labrum bilobed. Eyes oval, slightly oblique, subtruncate in front. Antennæ attaining the middle of the thorax, slightly thicker externally, last joint longer and obliquely emarginate. Thorax slightly wider than long, narrowed in front, sides very feebly, base broadly arcuate, anteriorly with a discal series of three punctures exterior to which is another puncture forming

with the last two of the discal series an equilateral triangle, marginal series small and distantly placed. Scutellum smooth. Elytra slightly narrower than the thorax, conjointly a little longer than wide, surface shining, variably punctured, punctures usually coarse and deep and irregularly disposed. Abdomen iridescent, moderately closely but not coarsely punctulate, beneath less densely punctured. Femora sparsely punctulate, posterior tibiae spinulose externally. Length .24—.36 inch; 6—9 mm.

Sixth ventral segment of male moderately emarginate, anterior tarsi dilated in both sexes but much more broadly in the male.

Post coxal process moderate, translucent.

The color is nearly always piceous or black, sometimes the elytra are rufous, the margins of the ventral segments pale and the legs piceo-testaceous.

There is considerable variation in the punctuation of the elytra which may be described as follows:

*pediculus* Nord.—Elytra with three irregular rows of coarse deep punctures between which the surface is often slightly rugulose. In the specimens before me the lateral puncture which forms an equilateral triangle with the last two discals is absent. Two of the specimens before me are from Mannerheim's series of this species from Kenai, Alaska.

*capucinus* Grav.—Elytra with the three series of punctures very irregular and between them numerous smaller punctures. Thorax with the equilateral triangle.

*marginalis* Mäkl.—Elytra rufo-piceous, punctures of nearly equal size, moderately large and regularly disposed. Thorax with equilateral triangle. One of the specimens before me is from Mannerheim.

Erichson says of *pediculus* that the elytra are irregularly biserially punctate, evidently taking no account of an obsolete series between the sutural series and the one which starts at the humerus. I can find no valid reason for accepting *pediculus* or *marginalis* as valid species, the series now before me rendering it impossible to separate them.

This species occurs from Alaska southward to California, and in the Atlantic region to Georgia.

*Q. desertus* n. sp.—Form slender, elongate. Head oval, slightly longer than wide with punctures as in *limbifer*. Labrum bilobed. Eyes oval slightly oblique, truncate in front. Antennae attaining the middle of the thorax, slightly thicker externally, last joint longer and obliquely emarginate. Thorax as long as wide, sides feebly, base more broadly arcuate, surface smooth and shining and with three discal punctures, no lateral series, marginal punctures small and distant. Scutellum punctured. Elytra as wide as the thorax, conjointly as wide as long, surface densely and finely punctured and with brownish pubescence. Abdomen very finely and moderately densely punctured and pubescent, beneath finely and sparsely punctured. Femora sparsely punctured, tibiae externally spinulose. Length .32—.44 inch; 8—11 mm.

The sixth ventral of the male is feebly emarginate at middle, the anterior tarsi broadly dilated, in the female less dilated.

The five specimens before me are of brownish color with the head piceous.

Post coxal process of thorax moderately long, translucent.

This species although allied by its characters to *limbifer*, might readily be mistaken for *molochinus*, with which it agrees quite well in form and general appearance. It differs however principally in the form of the labrum. From *limbifer* it differs by its longer head, more slender form and denser and finer punctuation.

Occurs near the Colorado River in California, in Arizona and south-western Utah.

**Q. limbifer** n. sp. (Fauvel mss.)—Head oval, longer than wide, moderately constricted posteriorly, surface very finely alutaceous and with very minute punctures sparsely placed, the usual larger punctures are disposed—one at the insertion of the antennae, one at the middle of the margin of the eye, another above the posterior border of the eye and one immediately behind the eye around which puncture are numerous smaller ones. Labrum bilobed. Eyes oval, slightly oblique. Antennae attaining the middle of the thorax, filiform, last joint slightly longer and very feebly obliquely truncate. Thorax as long as wide or nearly so, feebly narrowed in front, sides feebly, base more broadly arcuate, surface smooth and shining, three discal punctures anteriorly, no lateral series, marginal punctures finer and distant. Scutellum sparsely punctulate. Elytra as wide as the thorax, conjointly a little longer than wide, surface shining, very regularly punctured but neither very coarsely nor densely, sparsely pubescent. Abdomen more finely and less densely punctured, sparsely pubescent, beneath more coarsely punctured than above. Femora sparsely punctate, posterior tibiae spinulose externally. Length .24—.30 inch; 6—7.5 mm.

The sixth ventral of the male is feebly emarginate. The anterior tarsi are dilated in both sexes but less in the female.

The color of this species is usually piceous, with the margin of the thorax, the elytra and the apices of the abdominal segments paler. It may however be entirely piceous. The punctuation of the elytra and abdomen shows some variation and may be denser than described above.

The post coxal process is moderately long and translucent.

This species resembles *sublimbatus*, but this latter has the scutellum smooth and the elytra more coarsely and deeply punctured.

Occurs in California, Gilroy and Crystal Springs (Crotch), Mariposa, (Thevenet).

**Q. laevigatus** Gyll. (*Staph.*) Ins. Suecc. ii, 306; Erichs. *Staph.* p. 529; *plagiatus* Mann. Bull. Mosc. 1843, ii, p. 231; *longipennis* Mann. loc. cit. 1846, ii, p. 509; *rufipennis* Mäkl. Bull. Mosc. 1853, iii, p. 109.—Head broadly oval,

smooth, shining, rather strongly constricted at the neck, punctured as in *fulgidus*. Labrum bilobed. Antennæ attaining the middle of the thorax, gradually thicker externally, last joint longer and slightly obliquely truncate. Eyes longitudinally oval, subtruncate in front. Thorax slightly broader than long, smooth, shining, very little narrowed in front, sides feebly, base a little more arcuate; dorsal series of three punctures, no lateral series, marginal punctures small and distant. Scutellum smooth. Elytra as wide as thorax, conjointly a little longer than wide, surface impunctured, slightly wrinkled and feebly shining, glabrous. Abdomen sparsely punctate and pubescent, beneath and above. Posterior tibiae not spinulose externally, the femur with a row of short bristly hairs beneath. Length .20—.36 inch; 5—9 mm.

The male has a feeble emargination at the tip of the sixth ventral. The anterior tarsi are dilated in both sexes but rather less in the female.

The color of this species is usually piceous, the elytra and margins of the abdominal segments rufo-testaceous. It may however be entirely piceous black, or the pale elytra may have a broad median piceous stripe.

The post coxal process is moderately long and translucent.

I have seen types of *plagiatus* and *longipennis*, and the description of *rufipennis* does not differ from some of the well known varieties before me.

Occurs in northern Europe, and on our own continent from Alaska to Oregon, Kansas, Canada and Pennsylvania.

**Q. molochinus** Grav. (*Staph.*) Mon. p. 46; Erichs. *Staphyl.* p. 555.—Head oval, smooth, shining, feebly constricted behind, with a small puncture at the base of the antennæ, another at the inner margin of the eye, three above the eye posteriorly and one immediately behind, front with or without punctures. Eyes moderately large, not prominent, oval, slightly oblique, subtruncate in front. Labrum moderately prominent anterior margin broadly arcuate. Antennæ nearly attaining the base of the thorax, rather slender, second joint very little shorter than the third, last joint obliquely truncate. Thorax a little wider than long, narrowed in front, sides feebly base broadly arcuate, surface smooth shining, with a discal series of three punctures, two others placed transversely and with marginal punctures around the base alone. Scutellum punctured. Elytra slightly narrower than the thorax, conjointly a little wider than long, densely punctured and clothed with brownish hair. Abdomen moderately densely pubescent and clothed with similar pubescence, beneath somewhat less densely punctured than above. Legs sparsely punctate, tibiae spinulose externally. Length .28—.50 inch; 7—12.5 mm.

The sixth ventral of the male is deeply triangularly emarginate, the anterior tarsi broadly dilated and in the female less dilated.

The color is usually entirely piceous, the elytra and legs are however often brownish, or piceous with the entire limb rufous.

The post coxal process is rather short and translucent.



The majority of specimens from Vancouver and the west coast have two frontal punctures, while those from the eastern region are deprived of them. This is by no means constant, however, in either case, and as there are no other characters I keep them together.

Occurs from New Hampshire to Vancouver, and as far south as northern Georgia. It is also widely distributed in Europe, but I have not seen any from Alaska.

**Q. hyperboreus** Erichs. Staphyl. p. 547.—Head orbicular, strongly constricted posteriorly, smooth shining, a small puncture at the base of the antennæ, one at the middle of the upper margin of the eye two on the vertex one of which is at the edge of the eye, one immediately behind the eye on its posterior edge. Labrum truncate. Eyes large prominent, regularly oval, longitudinal. Infra-orbital ridge nearly obliterated. Antennæ slender, slightly thicker externally, passing the middle of the thorax, second joint equal to the third, last joint obliquely truncate. Thorax as wide as long, narrowed in front, sides feebly base more broadly arcuate with punctures as in *molechinus*. Scutellum punctulate. Elytra as wide as the thorax, conjointly as wide as long, surface moderately densely and feebly punctured and clothed with brownish pubescence. Abdomen a little more coarsely and less densely punctured than the elytra, beneath similarly punctured. Femora punctulate, tibia spinulose. Length .20—.24 inch; 5—6 mm.

The sixth ventral of the male is triangularly emarginate. The anterior tarsi strongly dilated in the male, very feebly in the female.

The color is piceous black, legs more or less testaceous, elytra brownish with an æneous tinge, abdomen iridescent.

The post coxal process is short and translucent.

Occurs from Maine to Vancouver and northward, but very little to the south of this line.

**Q. brunnipennis** Mann. Bull. Mosc. 1843, ii, p. 232; *ænescens* Mäkl. Bull. Mosc. 1852, ii, p. 315; 1853, iii, p. 190.—This species resembles *hyperboreus* and differs in the following characters: Front with two impressed punctures. Eyes large but not very prominent. Infra-orbital ridge well marked. Scutellum smooth. Elytra more coarsely and less densely punctured than *hyperboreus*. Abdomen much more finely and sparsely punctured than the elytra, beneath a little more coarsely than above. Length .24—.28 inch; 6—7 mm.

Sexual characters as in *hyperboreus*.

Color piceous or black with faint æneous tinge, legs piceous or somewhat paler. Elytra often brownish, segments of abdomen margined with paler at the tip.

Post coxal process short, transparent.

Specimens rarely occur without frontal punctures.

This species could only be confused with *hyperboreus*, but its smaller eyes, less punctured elytra, distinct infra-orbital ridge and smooth scutellum will at once distinguish it.

Occurs from the Lake Superior region westward to Vancouver, and northward to Alaska.

I have seen specimens of Mäklin's species and have no doubt of its identity with *brunnipennis*, although I have no type of the latter.

**Q. debilis** n. sp.—Head oval, with punctures as in *hyperboreus*. Eyes large, longitudinal, oval, not prominent. Infra-orbital ridge extremely feeble. Labrum truncate. Antennæ as in *hyperboreus*. Thorax as in *hyperboreus*, surface (also the head) distinctly alutaceous. Scutellum smooth. Elytra a little wider than the thorax, conjointly as wide as long, surface finely alutaceous, very sparsely and finely punctate, sparsely pubescent. Abdomen sparsely punctured and pubescent, a little more densely and finely at the basal portion of each segment, beneath as above. Femora punctulate, tibiæ spinulose. Length .18—.24 inch; 4.5—6 mm.

Sexual characters as in *hyperboreus*.

Color piceous without metallic lustre, inflexed posterior of the elytra testaceous. Legs testaceous, tibiæ piceous.

Post coxal process short, transparent.

Two specimens are before me, the larger, from Clear Lake, California, has the elytra more distinctly punctured than the smaller and the punctures more numerous, the same being the case on the abdomen. They are however representatives of one species.

Clear Lake, California, and Vancouver, (Crotch).

**Q. prostrans** n. sp.—Head orbicular, a little wider than long, posteriorly strongly constricted, front slightly triangularly impressed, without punctures, a small puncture at the base of the antennæ, a larger at the inner margin of the eye, three others arranged longitudinally on the occiput one of which touches the eye. Labrum truncate with a slight impression at middle. Eyes large and very prominent. Infra-orbital ridge obsolete. Antennæ slender, attaining the middle of the thorax, second and third joints equal, last obliquely truncate. Thorax a little longer than wide narrower in front, sides feebly, base more distinctly arcuate and with punctures as in *hyperboreus*, surface smooth, shining. Scutellum smooth. Elytra as wide as the thorax, conjointly a little longer than wide, a feeble longitudinal impression along the suture a little deeper at the tip, surface shining, with moderately coarse and rather closely placed punctures and few blackish hairs. Abdomen very sparsely punctate and with few black hairs, the segments with a slight impression each side of the middle in which the punctuation is denser and finer and the pubescence greyish, beneath sparsely punctulate. Femora sparsely punctured, tibiæ spinulose externally. Length .22 inch; 5.5 mm.

The sixth ventral of the male is emarginate, the anterior tarsi dilated, in the female very feebly dilated.

The color is uniformly black and shining, with a feeble æneous tinge, the legs and anterior coxæ testaceous and the tibiæ piceous. Antennæ piceous.

Occurs in northern California and Vancouver.

**Q. seriatus** n. sp.—Head oval strongly constricted behind, front without punctures, at base of antennæ a small puncture, two at the inner margin of each eye, one on the occiput, and one behind the eye. Labrum truncate. Eyes large and prominent. Antennæ attaining the middle of the thorax, second joint as long as the third. Thorax longer than wide, narrower in front, sides feebly, base more broadly arcuate, surface smooth and shining, anteriorly on the disc three punctures, laterally a row also of three, marginal punctures small and distant. Scutellum smooth, shining. Elytra a little wider than the thorax, conjointly longer than wide, surface shining and with rows of punctures arranged as follows: a scutellar series of three punctures, a row of six or seven beginning at the humeri, an intermediate series of three or four, a marginal series of six or seven exterior to which are a few irregularly placed punctures. Abdomen very sparsely punctate, segments vaguely transversely impressed and with a slight space with greyish hair, beneath more coarsely punctured than above. Femora sparsely punctulate, tibiae finely spinulose externally. Length .24 inch; 6 mm.

The sixth ventral of the male is emarginate, the anterior tarsi feebly dilated.

The color is black, shining, the elytra æneous, the antennæ are pale rufous. The femora are rufo-testaceous, the tibiae slightly piceous.

Post coxal process short, translucent.

One specimen, Vancouver, Crotch.

**Q. puncticeps** n. sp.—Head orbicular, strongly constricted behind, two frontal punctures deeply impressed and with numerous punctures above each eye on the vertex and occiput and behind the eyes. Labrum truncate. Eyes large, oval, oblique and prominent. Infra-orbital ridge nearly obliterated. Antennæ slender, nearly attaining the base of the thorax, second joint nearly as long as the third, last joint obliquely truncate. Thorax as long as wide, narrower in front, sides feebly base more broadly arcuate, and with punctures as in *Ayperboreus*, surface smooth, shining. Scutellum smooth. Elytra slightly wider than the thorax, conjointly longer than wide, a moderate impression common to both elytra at the tip of the suture and a very vague oblique impression of the disc, surface very shining and with moderate punctures very regularly but not densely placed, sparsely pubescent. Abdomen very sparsely punctate and pubescent, beneath more distinctly punctured than above. Femora punctulate, tibiae spinulose externally. Length .30 inch; 7.5 mm.

The sixth ventral of the male is triangularly emarginate, the anterior tarsi are feebly and nearly equally dilated in both sexes.

The post coxal process is triangular, translucent.

The color is black, shining with decided æneous lustre, the antennæ and legs piceous.

Occurs at Vancouver, Crotch.

**Q. ferox** Lec. Proc. Am. Philos. Soc. 1878, p. 388.—Head orbicular, strongly constricted behind, with the regular punctures as in *vernix* and numerous smaller ones on the vertex above the eye and at the side of the head behind. Labrum truncate. Eyes broadly oval, slightly oblique, subtruncate in front.

Infra-orbital ridge well marked. Antennæ slender, nearly as long as head and thorax, third joint twice as long as the second, last slightly obliquely truncate. Thorax quadrangular slightly longer than wide, sides nearly parallel, slightly arcuate in front, base broadly arcuate, a discal series of two punctures one at the apical margin, another posterior to it and rather distant, surface smooth, shining. Scutellum smooth. Elytra slightly wider than the thorax, conjointly longer than wide, sutural stria vaguely impressed and with three or four vague punctures, a median discal series of five or six and numerous, densely placed punctures on the deflexed portion of the lateral margin, surface shining. Abdomen moderately coarsely and densely punctured, sparsely pubescent, beneath as above. Femora punctulate, tibiae spinulose, tarsi glabrous above. Length .44 inch; 11 mm.

The sixth ventral of the male is broadly emarginate. The anterior tarsi are dilated in both sexes but more so in the male.

Color black shining, legs piceous, tarsi usually paler. Abdomen iridescent.

Post coxal process short and broad, translucent.

Occurs from Massachusetts to Canada, Florida and Louisiana.

**Q. vernix** Lec. Proc. Am. Phil. Soc. 1878, p. 389.—Head oval, slightly longer than wide, moderately constricted behind, surface smooth, shining, and with a small puncture at the base of the antennæ, one at the margin of the eye in front, another more posterior, one behind the eye and numerous small punctures at the side of the head beneath. Labrum entire, arcuate in front. Eyes oval, slightly oblique, subtruncate in front. Infra-orbital ridge well marked. Antennæ slender, attaining the middle of the thorax, second joint shorter than the third, last joint obliquely truncate. Thorax relatively large, broader than long, narrower in front, sides moderately, base more arcuate, surface smooth, shining, anteriorly two discal punctures on each side, another near the side in front, marginal punctures small. Scutellum smooth. Elytra as wide as the thorax, conjointly a little wider than long, a deep sutural stria with one puncture near the scutellum, a discal series of four or five punctures, deflexed portion of elytra rather densely punctured. Abdomen very sparsely punctate and sparsely pubescent, beneath as above. Femora punctulate, tibiae spinulose externally, tarsi glabrous above. Length .48 inch; 12 mm.

The sixth ventral of the male is merely truncate, in female arcuate; the anterior tarsi in both feebly dilated.

The post coxal process is short, triangular and corneous.

The color is black highly polished, the abdomen iridescent.

Occurs in Massachusetts, Canada, Illinois, Michigan, but rare.

I have repeated this description to make it correspond in scope with the others in the paper. In the original description Dr. Leconte says there is but one discal thoracic puncture, but by the Erichson method of numeration there are two by counting the one at the apical margin, the fact being the same, but merely otherwise described.